

## REMARKS/ARGUMENTS

### *Status of Claims*

Claims 1-4, 6-22, 24-46 are pending in the application.

Claims 1, 19, and 41 have been amended.

Claims 44-46 are new.

Applicants hereby request further examination and reconsideration of the presently claimed application.

### *Claims Rejection – 35 U.S.C. § 102*

Claims 1-4, 6, 9-16, 19-22, 24, and 27-40 stand rejected under 35 USC § 102(b) as being anticipated by *Thanh* (U.S. Patent 6,054,409). Claims 2-4, 6, and 9-16 depend on claim 1, and claims 20-22, 24, and 27-40 depend on claim 19. Thus, claims 1-4, 6, 9-16, 19-22, 24, and 27-40 stand or fall on the application of *Thanh* to independent claims 1 and 19. According to MPEP § 2131, “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” The Applicants submit that *Thanh* fails to teach each and every element as set forth in claims 1 and 19, and consequently fails to anticipate claims 1-4, 6, 9-16, 19-22, 24, and 27-40.

*Thanh* fails to anticipate claims 1-4, 6, 9-16, 19-22, 24, and 27-40 because *Thanh* fails to teach that the catalyst contains less than 80 weight percent silver on the skin periphery. Amended claim 1 reads:

1. A catalyst for the selective hydrogenation of acetylene, comprising:  
a support selected from the group consisting of alumina, titania, zirconia, zinc aluminate, zinc titanate and mixtures thereof, wherein the support has a uniformly round external surface, a surface area in the range of about 3 to about 10 square meters per gram, a pore volume of about 0.24 to about 0.64 cubic centimeters per gram and has an average pore diameter from about 600 Angstroms to about 5000 Angstroms;

palladium in the range of about 0.01 to 1.0 weight percent of the catalyst, wherein substantially all of the palladium is concentrated in a skin periphery of the catalyst, wherein the skin has a thickness less than about 400 microns; and silver in the range of about 0.5 to 10.0 times the weight of the palladium, wherein the silver is distributed throughout the catalyst, and **wherein less than 80 weight percent of the silver is present in the skin periphery.**

Amended claim 19 also contains the limitation “wherein less than 80 weight percent of the silver is present in the skin periphery,” support for which is found in paragraph 39 of the specification. In contrast, *Thanh* teaches “at least 80% of the Group IB metal [is] present in a volume at the periphery of the catalyst...” Silver is a Group IB metal, and thus *Thanh* teaches a silver distribution that is different than the pending claims. Because *Thanh* fails to teach an element of claims 1 and 19, *Thanh* fails to anticipate claims 1 and 19 as well as dependent claims 2-4, 6, 9-16, 20-22, 24, and 27-40, and claims 1-4, 6, 9-16, 19-22, 24, and 27-40 should be allowed over the prior art.

***Claims Rejection – 35 U.S.C. § 103***

Claims 1-4, 6, 9-16, 19-22, 24, and 27-40 stand rejected under 35 USC § 103(a) as being unpatentable over *Thanh*. Claims 1, 6-8, 17, 18, 25, 26, and 41-43 stand rejected under 35 USC § 103(a) as being unpatentable over *Cheung* (U.S. Patent 5,475,173) in view of *Thanh*. Alternatively, Claims 1, 6-8, 17, 18, 25, 26, and 41-43 stand rejected under 35 USC § 103(a) as being unpatentable over *Thanh* in view of *Likins* (U.S. Patent 2,946,829). Claims 2-4 and 6-16 depend on claim 1, claims 20-22 and 24-40 depend on claim 19, and claims 42 and 43 depend on claim 41. Thus, the pending claims stand or fall on the application of *Thanh*, either alone or in combination with *Cheung* or *Likins*, to independent claims 1, 19, and 41.

The Applicants respectfully submit that the prior art of record does not establish a *prima facie* case of obviousness as to the pending claims. According to MPEP § 2142, three basic criteria must be met to establish a *prima facie* case of obviousness:

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.

Similarly, the fact that the Examiner has the burden of proof with respect to the elements of the *prima facie* case of obviousness is also well defined in MPEP § 2142:

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

The Examiner has not met the burden of establishing the *prima facie* case of obviousness because *Thanh*, either alone or in combination with *Cheung* or *Likins*, fails to teach or suggest the limitations of amended claims 1, 19, and 41.

The Examiner has not met the burden of establishing the *prima facie* case of obviousness because *Thanh* alone or in combination with either *Cheung* or *Likins* fails to teach or suggest the silver distribution limitation of claims 1, 19, and 41. The independent claims have been amended to contain the silver distribution limitation shown above, namely that the catalyst contains less than 80 weight percent silver on the skin periphery. As explained above, *Thanh* fails to teach such a limitation by teaching that at least 80 percent of the silver is present at the periphery of the catalyst. *Cheung* and *Likins* do not make up for *Thanh's* shortcomings as *Cheung* fails to teach or suggest

any specific silver distribution, and *Likins* fails to teach or suggest any silver in the catalyst. Because the cited prior art fails to teach or suggest a limitation in the claims, the Examiner cannot present a *prima facie* case of obviousness, and the pending claims should be allowed over the cited prior art.

#### ***New Claims***

New dependent claims 44 and 45 are not anticipated or rendered obvious by the prior art of record because the cited prior art fails to teach or suggest a catalyst for the selective hydrogenation of acetylene ... wherein no more than about 75 weight percent, alternatively no more than about 70 weight percent, of the silver is present in the skin periphery. New dependent claim 46 is not anticipated or rendered obvious by the prior art of record because the cited prior art fails to teach or suggest a method for the treatment of a gaseous mixture ... wherein the gas hourly space velocity (GHSV) of the gaseous mixture is in the range of about 10,000 to about 15,000 liters of feed per liter of catalyst per hour. Support for these new claims is found in paragraphs 22, 39, and 44 of the specification. Thus, new claims 44-46 are allowable over the cited prior art.

### CONCLUSION

Consideration of the foregoing amendments and remarks, reconsideration of the application, and withdrawal of the rejections is respectfully requested by Applicants. No new matter is introduced by way of the amendment. It is believed that each ground of rejection raised in the Final Office Action dated May 16, 2007 has been fully addressed. If any fee is due as a result of the filing of this paper, please appropriately charge such fee to Deposit Account Number 50-1515 of Conley Rose, P.C., Texas. If a petition for extension of time is necessary in order for this paper to be deemed timely filed, please consider this a petition therefore.

If a telephone conference would facilitate the resolution of any issue or expedite the prosecution of the application, the Examiner is invited to telephone the undersigned at the telephone number given below.

Respectfully submitted,  
CONLEY ROSE, P.C.

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